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BEST BUY HOSPITALS
MARK I
EVALUATION REPORT

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EVALUATION OF THE BEST BUY

HOSPITALS

CATERING DEPARTMENT

DHSS

MARCH 1978

CONTENTS

I Introduction

II Terms of reference

III Hospital stores

Para: 3.1 Loading Bay
" 3.2 Provisions Store
" 3.3 Store Refrigeration and Deep Freeze
" 3.4 Supplies Ramp

IV Kitchen

Para: 4.1 Approach to the Kitchen
" 4.2 Kitchen Storage Areas
" 4.2.1 Day to Day Store
" 4.2.2 Meat Refrigeration
" 4.2.3 Kitchen Deep Freeze
" 4.2.4 Larder/Cooling Room
" 4.2.5 Kitchen Refrigeration
" 4.2.6 Vegetable Store
" 4.3 Kitchen Preparation Areas
" 4.3.1 Vegetable Preparation Area
" 4.3.2 Meat and Fish Preparation Areas
" 4.3.3 Pastry Preparation Area
" 4.3.4 General Preparation Area
" 4.3.5 Diet Preparation Bay
" 4.4.1 Cooking Area
" 4.4.2 Cooking Equipment
" 4.4.3 Boiling Pans
" 4.4.4 Steaming Ovens
" 4.4.5 Fryers
" 4.4.6 Convection Ovens
" 4.4.7 Oven Ranges/Boiling tops
" 4.4.8 Hot Cupboard, Bain Marie and Water Boiler
" 4.4.9 Grills or Salamanders

V Tray Service Areas

Para: 5.1.1 Tray Service System
" 5.1.2 " " Preparation Area
" 5.1.3 " " Supervisor's Office
" 5.2.1 Trolley Bay and Trolley Wash
" 5.3.1 Central Beverage Preparation Unit
" 5.3.2 Ward Beverage Unit

VI Central Wash-Up and Stores

Para: 6.1 Pan Wash Area
" 6.2 Central Wash-up
" 6.3 Cleaners Room
" 6.4 Cleaning Materials Store
" 6.5 Equipment Store
" 6.6 Disposables Store

CONTENTS CONTINUED

VII Staff Accommodation

Para: 7.1 Kitchen Superintendent's Office
" 7.2 Staff Rest Room
" 7.3 Staff Lavatories and Changing Room

VIII Hygiene and Environmental Requirements

Para: 8.1 Kitchen Finishes and Hygiene
" 8.1.1 Floor Surfaces
" 8.1.2 Wall "
" 8.1.3 Inner roof Surfaces
" 8.1.4 Doors and Entrances
" 8.1.5 Windows
" 8.1.6 Tabling and Worktops
" 8.1.7 Shelving and Racking
" 8.1.8 Drainage and Gulleys
" 8.1.9 Deep Cleaning
" 8.2 Environmental Requirements
" 8.2.1 Heating and Ventilation
" 8.2.2 Lighting

IX Dining Areas

Para: 9.1.1 Dining Room Servery
" 9.1.2 Dining Room Pantry
" 9.1.3 Dining Room Supervisor's Office
" 9.1.4 Main Dining Area
" 9.2.1 Coffee Room Servery
" 9.2.2 Coffee Room
" 9.3.1 Snack Bar Servery
" 9.3.2 Snack Bar Area
" 9.3.3 Vending Machines

X Office Accommodation

Para: 10.1 Catering Manager's Office
" 10.2 Catering Clerks "
" 10.3 Assistant Catering Manager's Office
" 10.4 Dietician's Office

XI 11.1 Conclusions
11.2 Acknowledgements
11.3 Bibliography
11.4 Table of Comparisons of areas with other guidance material

EVALUATION OF THE BEST BUY HOSPITAL CATERING DEPARTMENT, MARCH 1978

Hospitals Visited	1. West Suffolk Hospital, Bury St Edmunds, Suffolk		
	2. Frimley Park Hospital, Frimley, Surrey		
Officers of the Team	Mr J Ward	Supt Architect	DHSS
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I. INTRODUCTION

The following report is based on notes taken by the above team during their visit to the hospitals, and incorporates opinions expressed by hospital officers. The report includes comments made during an earlier evaluation by Mr A J Beavan, the department's catering adviser previously concerned with the Best Buy design.

The catering department was designed on the BB policy of reducing areas and scales of equipment to the minimum consistent with efficient functioning. In pursuit of those objectives the Project Team made a number of decisions which have a bearing on the present exercise and should therefore be recorded. They can be classified under two main headings as follows:

A. GENERAL (WHOLE-HOSPITAL) POLICY DECISIONS

1.1 Location and Communications

The kitchen had to be sited on the same level as most wards (ie on first floor) for ease of meal service to patients. Since it would also provide meals for staff their dining room should adjoin. But further space on that floor was at a premium so the coffee lounge would be better placed on the ground floor, where it could be accessible from all directions and open straight into a courtyard.

The kitchen would need its own day-to-day storage space, but for other purposes it should be linked into the hospital's comprehensive Supply and Disposal system based upon scheduled tug-and-trolley rounds. To maintain the "horizontal" nature of the system (without goods lifts) the two floors would be linked by ramps via the Supply Centre. The latter was to be a separate industrial-type building which could provide economical goods-handling and storage facilities for all users, including the catering department. The efficacy of the S and D system has a lot to do with good organisation and staffing; only in that context is it possible to identify genuine design defects.

1.2 Traffic Flows

When space is being as tightly used as in the BB design the planned movement of people and goods becomes very important, not only between departments via the hospital street but also within each department. A certain layout suits a certain pattern of traffic; if the latter is varied (with or without good reason) the former may become unsuitable. This is already becoming apparent and needs bearing in mind when making whatever changes the users may find necessary in future.

1.3 Engineering Services

The whole hospital was to be heated by low pressure hot water, ie no central steam generation. Whenever steam was essential it could be generated in situ; but this did not seem to apply to cooking areas where gas and electric

methods were both available. Nor did the absence of steam from such areas directly influence the highly specialised heating and ventilation arrangements. As much as possible of the equipment for the latter purpose would be located on the roof - or made accessible from the roof - for ease of maintenance and cleaning.

1.4 Cleaning

In general the policy for the cleaning services was fashioned around daily, weekly and 6-monthly schedules, and the problems in the kitchen area received particular attention. The subject of food hygiene has assumed growing important since BB was planned, of course, but the decisions taken then were based on best advice available at the time. For instance it was thought unwise to go in for extensive tiling of walls - completely smooth scrubbable surfaces were preferred. The hosing-down of floors seemed to present problems with gulleys and grease-traps which could largely be avoided by use of mechanical scrubbers instead. The 6-monthly "deep-clean" of roof interiors, windows, light fittings etc was seen as a programmed operation involving the brief shut-down of cooking areas. With hindsight some of these decisions might perhaps have been different.

B. SPECIFIC (DEPARTMENTAL) POLICY DECISIONS

1.5 Ready-Prepared and Frozen Foods

The direction in which food wholesaling was thought to be moving at that time enabled the Project Team to plump for optimum use of ready-prepared foods, with frequent deliveries, and thus save on storage/preparation areas as well as staff numbers. In fact the trend now seems to have turned towards buying foods, (which require more refrigerated storage space than was provided) and/or preparing fresh foods in situ.

1.6 Central Beverage Preparation

The decision to centralise catering services to the fullest extent meant worthwhile savings of ward space, and it was felt that routine beverage services could follow the same pattern.

Again the success of the policy was likely to owe much to proper organisation and facilities. A ward beverage preparation unit or still-room having been established above the staff lounge, the latter could also be served from that still-room by means of a hoist.

1.7 Demand for Staff Meals

While detailed planning of the catering department was under way it began to appear that the introduction of charges for staff meals was affecting the pattern of demand. It was not clear what the pattern would eventually be, and anyway there was little scope for design changes in the main dining room or snack bar. A certain increase in staff use of the snack bar facilities was about all that could be allowed for, but with hindsight this should clearly have been greater.

1.8 LASMEC Cooking Equipment

A modular system of cooking equipment which was undergoing thorough local authority development at that time (LASMEC) seemed to offer advantages for hospital installation as well, and was adopted in the BB design. The decision

that it could not be used after all came at a late stage of planning. The implications of redesigning the cooking area for another manufacturer's equipment were not perhaps fully realised in the tender documentation.

1.9 Tray Service System

The choice between systems marketed at the time for keeping patients' meals hot fell upon one which used trolleys with a heated upper compartment and a cool lower compartment. The pre-heating of the trolleys demands parking space with multiple power points. The conveyor belt for plating the meals is shorter than with other systems and their further development has meant that such a choice made nowadays might well be different.

II. TERMS OF REFERENCE

2.1 The evaluation was carried out to assess the Best Buy catering department design. The areas are discussed in detail below and recommendations are given for inclusion in future catering design guidance. (Some of the criticisms have already been met in the Mk 2 design used at Kings Lynn).

2.2 The total of all the demands for extra space which are mentioned in this report would involve redesigning to such an extent as to have repercussions well beyond the catering department itself. As this seems quite impracticable a more selective approach is necessary. An attempt has therefore been made to categorise the various recommendations; ie those which seem capable of being implemented within the existing Mark I design are indicated by an asterisk after the number. Others can only be considered in some wider context.

2.3 The Department is willing to offer further advice if desired on ways of effecting improvements at Bury and/or Frimley, for instance by supplying a sketch plan for use of the space adjoining the catering offices.

III. HOSPITAL STORES

3.1 Loading Bay

This provides access to the central store which is sited in the service unit adjacent to the main building. The dimensions of the bay appear satisfactory. A separate area should have been provided for returnable containers - the use of all convenience food creates a large quantity of empty cartons and bottles.

It is important to keep incoming foods separate from outgoing waste and other dirty containers.

Recommendations

1. A separate part of the bay should be provided for the disposal of waste. 9.14 square metres.

2. A separate store should be provided for returnable empties. Design guidance recommends 9.00 square metres.

3.* A hose reel with spray attachment for washing down the bay and yard is essential.

3.2 Provisions Store

The area allocated for provisions is based on the concept that supplies would be delivered from a district or area stores. It is therefore designed to hold up to 10 days' supply. The stock levels at both hospitals were in excess of this figure and the area allocated had nearly been doubled. This is because at present they are being used as the main store with food being delivered direct from the suppliers.

The area available for each item limits the quantity that they can purchase. They are unable to purchase in large enough amounts to obtain reasonable discounts. At Frimley the stock level of most convenience foods was understood to be one months supply. Convenience foods, especially individual packs, occupy far more space then was originally estimated.

The store cannot be used for the breaking down of bulk foods, nor can bacon be sliced in this area. This is because the painted walls and bare floor do not satisfy the hygiene regulations. These require that the surfaces should be impervious.

Catering disposables are stacked all around the store wherever there is a space. An area should have been allocated for them because of the increased use of these products.

The stores are in the service area which is lower than the kitchen level; access is via a large ramp (see later).

Recommendations

1. Increase the area of the provision store, essential if a reasonable range of convenience foods is to be used.

2. Site the store on the same level as the kitchen wherever possible;

   alternatively provide a goods lift to link the 2 departments.

3.* A separate store for catering disposables should be provided.

4.* Mobile racking should be provided to allow changes in storage patterns.

5.* Resite the bacon slicer in the raw meat preparation area.

3.3 Store Refrigeration and Deep Freeze

The 2 x 200 cubic foot walk-in cold stores are adquate for present needs. The one originally allocated for milk is now used for other dairy products. Milk is delivered early and often waits for some time on the loading bay before distribution. A suggestion was made that a refrigerated store be provided accessible from the bay. This would enable the supplier to unload and put it straight in from the lorry; whether the milk delivery driver would co-operate is not known. The stores staff send the milk direct to the various departments.

The walk-in cold stores have gramolithic floors with an added paint surface which is wearing; the floors ahould have been tiled.

The deep freeeze cabinets have been unsatisfactory. They have broken down on numerous occasions wasting pounds of food. A separate 250 cubic foot walk-in deep freeze should have been provided.

A separate refregerator for fresh fish was not provided as it was not envisaged that it would be purchased.

Recommendations

1.* Provide a separate milk refrigerator sited near the loading bay for early milk deliveries.

2.* Provide a separate 20 cubic foot refrigerator specially designed to hold fresh fish.

3. Provide a 250 cubic foot walk-in deep free ze, fitted with appropriate safety alarms both for temperature and staff protection.

4.* The floors of all walk-in refrigerators and deep free zers in future to be tiled.

5.* The interior of all the above to be equipped with stainless steel mobile racking. This will ease food handling, stock control and cleaning.

3.4 Supplies Ramp

A large ramp connects the store with kitchen level corridor above. The gradient of 1 : 12 is not designed for a porter to push a provisions trolley up on his own without mechanical assistance, nor for the tray trolleys to descend. At present, as stated in policy, only bulk trolleys are used for the lower wards.

Similarly, all the waste products from the kitchen have to be taken down the ramp in large covered conveyors.

Recommendations

1.* Improve the power-tug schedules to cut out manhandling.

2. Consider a hoist or lift for the waste materials (see below)

IV. KITCHEN

4.1 Approach to the Kitchen

The kitchen can easily be identified from the hospital corridors by the stack of empty crates and cartons outside. A cumbersome trolley has been provided for refuse, but it is often full to overflowing. This is partially due to the large amount of packaging from convenience food.

Recommendations

1.* A separate disposal area for kitchen refuse is required, equipped with a compactor to reduce the volume of packaging materials.

2. A hoist or lift for kitchen refuse only should be considered if the S and D system cannot ensure that refuse is kept separately from incoming food.

4.2 Kitchen Storage Areas

4.2.1 Day to Day Store

The entrance for provisions is from the main corridor via a small lobby. Through an oversight the room at Bury was not provided with racking. The store area at Frimley was crowded with 6 deep-freeze cabinets which restricted the dry storage capacity, these should be relocated. The compressors of the cabinets plus the hot water pipes and the solar gain from the windows combine to raise the temperature of the room, which should be a cool area.

The store is only accessible from the main cooking area by walking through the busy pastry preparation area.

The high level celestory windows have leaked during rain-storms causing damage to food, but this problem is being rectified.

The painted walls at Bury have been tiled over to meet food hygiene standards. The worktops should be of stainless steel.

Recommendations

1.* Means should be provided for isolating the single pipe coil as necessary.

2.* Ensure that the windows are waterproof and have solar tinted glass.

3.* Mobile stainless steel racking should be provided.

4.* The walls of this store should be ceramic tiled.

5.* A stainless steel-topped working bench for the scales should be provided.

6. A separate 250 cubic foot walk in deep freeeze should be provided, Frimley would not then need to have 6 deep freeze cabinets in this room. Bury have converted the meat refrigerator into a deep freeze cold store.

7.* A hand basin should be provided in this area.

8. The store must be sited so as to be accessible from the main cooking and pastry areas.

4.2.2 Meat Refrigeration

This is sited opposite the day to day store and some distance from the meat preparation area to which it should be linked. All meat has to be taken through the pastry preparation area to reach the meat preparation bay and cooking area.

At Bury this walk-in refrigerator has been converted into a deep freeze. The painted floor surface is wearing, the floor should have been tiled. The shelving was buckling under the weight of frozen foods and should be replaced with stronger shelving.

At both hospitals boxed meat is now used; this requires a larger floor storage area. Previously carcase meat was used and this could be hung on rails and required less space. The area should therefore be increased.

Meat for defrosting at Bury is left on a trolley in the pastry preparation area, this is undesirable but is the only space available.

Recommendations

1. The meat refrigerator should be sited adjacent to and accessible from the meat preparation bay.

2.* Space should be provided for the defrosting of meat.

3.* The floor of refrigerators should be tiled.

4.* Mobile stainless steel racking should be provided.

5. The floor area of the refrigerator should be doubled.

6. A separate deep-freeze should be provided, see 4.2.3.

4.2.3 Kitchen Deep Freeze

This has not been provided as it was thought that the main store deep freeze would be adequate. The main store is only open 5 days a week so that some provision must be made at kitchen level especially for long weekends. It is therefore recommended that a separate 250 cubic foot walk-in deep freeze be provided as in paragraph 4.2.2.

4.2.4 Larder or Cooling Room

This room is cooled to 50°F and opens into the pastry preparation area. It is not very convenient for staff in the rest of the kitchen. Staff have to go through the pastry area with their trolleys to reach the larder. The door opens outward into the pastry area, increasing congestion.

The larder provides access to the kitchen refrigerator. This cooled room is not suitable for people to work in. At Bury the door has to be left open as it is used as a preparation area. This is because a separate area for cooked meats was not provided.

The room was designed to be used as a cooling area as stated in the policy.

Recommendations

1.* The room should be defined as a cooling area not as a larder. (In hotels for example the larder is a working area, this would prevent confusion and explain its purpose).

2. The room should be sited so that it is accessible to most of the preparation and cooking areas.

3. A separate general preparation area should be provided for cooked meats.

4.* As in the other areas mobile stainless steel racking should be provided.

4.2.5 Kitchen Refrigerator

The area is too small and should be doubled, the painted floor surface

is wearing and should have been tiled. The racking should be of stainless steel construction.

Recommendations

1. The room should be doubled in floor area.

2.* The floor should be tiled

3.* Mobile stainless steel racking should be provided.

4.2.6 Vegetable Store

The entrance is further along the corridor from that for dry goods. The door opens from the corridor into a lobby providing access directly to the cooled store. At Frimley this lobby has been converted into a tray service store, preventing access to the store. The vegetables now have to go in via the dry goods entrance, then through the pastry, cooking and vegetable areas to reach the store. Alternately the other entrance is through the tray service area.

The 'L' shaped vegetable store has a door at each end. It is adjacent to the vegetable preparation area. The shape limits the amount of wall shelving space available. A large part of the store at Bury is occupied by salad items which are very popular. Eggs are also stored here but they should be in the day to day store or kitchen refrigerator.

Recommendations

1. The store should be rectangular with doors at opposite ends to provide the maximum wall space for shelving.

2. The floor area should be increased by 50% and a separate part designated for salad items.

3.* The floor should be tiled.

4.* The shelving provided should be mobile stainless steel units.

4.3 Preparation Areas

4.3.1 Vegetable Preparation Area

The Best Buy policy of using all convenience food was to include pre-prepared vegetables. Therefore minimal vegetable machinery have been provided. It has become increasingly difficult over the years to find sufficient suppliers for the hospitals to purchase competitively. They are often in the hands of one supplier. Because of the rising cost of these items Bury is considering installing vegetable preparing machines or of setting up a central vegetable preparation unit of their own.

The vegetable store door opens out into the preparation area, preventing the safe use of the sink and worktop behind the door. The hand basin sited next to a mixing machine is a health hazard. A perspex screen has been erected in between the basin and the mixer.

The taps for filling the mobile tanks do not extend far enough from the wall. This has resulted in damage both to the wall and the Fibreglass tanks. Such tanks are unsuitable for the heavy wear of the kitchen. Once their surface is broken it becomes unhygienic and should be scrapped.

A large part of the worktop is used for preparing individual salads, additional mobile worktops are required; these can be parked when not in use. There is no GF slicer.

Recommendations

1.* A clear space should be provided behind the store door.

2. To permit flexibility for management in areas where pre-prepared vegetables are very expensive some vegetable preparing mahcines should be provided. These to include 28 lb potato peelers, chippers and a multi-purpose vegetable mill. The area will have to be increased to accommodate these items.

3. Reposition the hand basin or the mixer.

4.* Additional mobile work tops should be provided.

5.* Stainless steel mobile tanks or sinks should be provided instead of Fibreglass.

6.* The walls should be tiled and the corners protected.

7.* The taps should be positioned so that the mobile sinks do not damage the wall. A buffer strip should be provided to protect the wall.

8.* Additional mobile worktops are required for the preparation of salads.

9.* A gravity feed slicer for salad items should be provided.

10. Increase the floor area by 25% to provide a wider working area. It will have to be increased by up to 50% if vegetable machines are to be installed.

4.3.2 Meat and Fish Preparation Area

This area is for the preparation of cooked and raw meat and fish. It is a basic food hygiene regulation that raw and cooked meat preparation be kept completely separate to prevent cross infection. The restricted working space and tabling makes this very difficult to enforce.

A completely separate area should have been provided; at Bury the larder/cooling area is being used for cooked meats, whereas at Frimley part of the servery may be used.

The meat preparation equipment includes a gravity feed slicer; at Frimley the bacon slicer has been resited in this area, also the limited working space is further restricted by a large deep freeze cabinet.

Fish preparation space is minimal, a fish refrigerator has not been provided.

Recommendations

1. The area should be increased and designated a raw food area.

2. An additional 6' sink and drainer specifically for fish preparation should be provided.

3. The meat refrigerator should be sited adjacent to this area.

4. A 15 cubic foot refrigerator should also be sited in this area.

5.* The shelf above the worktop should be raised in height.

6.* The wall of this area should be tiled and the corners protected.

7.* Worktables should be mobile to ease cleaning.

8. The worktables should be increased to provide an extra 8' length.

9.* A composition topped meat chopping block is required in this area.

10.* Two mobile racks and a mobile sink should be provided.

4.3.3 Pastry Preparation Area

This area incorporates the corridor to the larder, day to day store and meat refrigerator. The working area is cluttered with mobile trolleys and boxes of disposables and refuse sack holders. There are insufficient working surfaces.

The area is dominated by a ceiling-mounted mixed supply air input unit. Four of these serve the whole kitchen throughout the 24 hours. They are designed to maintain a constant temperature of 55°F when cooking equipment is not in use by recirculating the air through a thermostatically controlled heater. Also they provide supplementary fresh air when the extract fans are running. Locating a unit in this confined space has created unacceptable noise levels and air movements, however. This leads to it being switched off locally, with the effect of unbalancing the whole system unless the unit is switched on again later to function overnight. (See also 8.2.1).

The area should be replanned to be self contained and to include a pastry oven. In the present design the pastry oven is in the main cooking area opposite, which is not convenient for the pastry cooks. Also at Frimley the pastry rolling machine has not been used as there is insufficient space.

More space is required under the worktops for parking the mobile bins. These are used to store flour, sugar etc.

At Bury a proportion of the tabling is used for sandwich and roll filling. These are sold in the snack and coffee rooms. This function could be carried out in the dining room pantry or still room.

The painted walls should be tiled, at Bury this has been carried out.

Recommendations

1. A separate self contained bay for pastry preparation, not forming part of a main corridor, should be provided.

2.* Better control of ventilation is required, the area is traditionally the warmest preparation area of the kitchen.

3. Position the pastry oven and cooking rack in this area.

4.* Additional working surfaces should be provided.

5. A 30 cubic foot refrigerator is required for this area.

6.* Ensure adequate space for storing the mobile bins under the worktops.

7. Position the pastry rolling machine table centrally in the area.

8.* A separate area for sandwich making and roll production to be provided in the dining area, preferably in the still room or pantry.

9.* The walls of this area should be tiled and the corners protected.

4.3.4 General Preparation Area Recommendations

This area has not been provided, but as already recommended in paragraph 4.3.2 a separate area is required for the preparation of cooked meats. It should have the same dimensions as for raw meats. The floor and walls will be tiled and the corners protected. The room will require ventilation to ensure a cool working environment.

At Bury and Frimley alternative arrangements are being made see 4.3.2. The following equipment is required:-

1. Stainless steel sink and drainer

2. Stainless steel worktop and cutting table

3. A refrigerator for salad items.

4.3.5 Diet Preparation Bay

This is a long narrow bay with a large pillar in the working area. The bay becomes very hot due to the close proximity of the fish fryers in the cooking area. There is insufficient ventilation and the high level windows cannot be opened.

Access to the bay is very restricted when the fryers are in use. There is insufficient working surface. A desk should have been supplied for the diet cook to write out the diet slips. A telephone is also required. The present liquidiser is too small.

The policy was for the diet bay to use cooking equipment in the central island which is most impractical. The bay should have its own cooking equipment and be self contained.

Recommendations

1.* A larger heavy duty liquidiser should be provided.

2. Extra worktabling is required.

3.* A telephone and small desk with stool should be provided.

4. The floor area should be doubled.

5. Cooking equipment should be provided to include a range and hotcupboard.

6.* The area should be better ventilated.

7. A 15 cubic foot refrigerator is also required.

8.* A cupboard is required for diet disposables.

4.4.1 Main Cooking Area

The area provided is too small, the equipment is too close together and there is very little working space for cooking staff.

The gangways between islands of equipment are too narrow. When the cooks have oven doors open they block the gangway completely.

These gangways are the thoroughfares between other departments of the kitchen. It is impossible to push trolleys through this area without accidentally damaging equipment as is evident from the many chips and dents.

The floor is tiled but many of the tiles have been cracked and part of the floor has also been renewed. It has become very slippery in places where the surface has worn. The pale colour makes it difficult to see spillages of fat or water.

Plinths

The equipment is in large island groups each upon its own plinth. This raises the equipment a few centimetres off the tiled floor and was wrongly thought to help in reducing the need to clean under equipment. The plinth is a raised portion of the floor, its only advantage is that it is easier clean the gangways by using vacuum scrubbers.

It is also difficult to rearrange the grouping of equipment if put on these plinths. The plinths are very expensive to remove and reposition if the layout is to change.

Recommendations

1. The floor should be level throughout. This will enable the layout to be easily changed.

2. The floor should be re-tiled. Preferably coloured tiles with a non-slip surface. Tiles can be used which are pre-shaped to form drainage gulleys, some incorporate drainage outlets.

3. The gangways between equipment should be at least 5' wide. These should be re-designated working areas. It can be dangerous for trolleys and staff to pass through the area when the equipment is being loaded or unloaded.

4. Separate thoroughfares should be provided around the perimeter of this area for staff and trolleys. This will make the area safer to work in and lessen the damage to equipment.

4.4.2 Cooking Equipment

Introduction

The equipment chosen was of modular design which is bolted together in island groups. These are in turn mounted on a common plinth with common services hidden in the void between the equipment, and Maintenance access is very difficult. To repair or remove a defective item the whole group has to be put out of action. The engineer has to wait for the oven ranges to cool down before he can gain access to the service pipes. It is also difficult to detect and locate leakages if the services are hidden in the centre of an island group.

Cleaning is equally difficult and the space behind the cladding of these island groups can be a breeding ground for pests. It is therefore difficult to ensure that the equipment is thoroughly clean.

It is also difficult to replace single items of a group because makers change their designs and the model chosen may well become obsolete. When replacements are required it is often impossible to match the suite. It is also far too expensive to replace the whole group. If a replacement is not required the equipment either side of the gap will have to be fitted with side panels and the one behind with a back panel.

Recommendations

1. The equipment should be sited in small groups with a passageway between. This will ease maintenance and cleaning.

2. Equipment shouls wherever possible be mobile. Gas and electric equipment is now being supplied fitted with flexible armoured supply pipes.

3. Equipment too large to be mobile should be on legs, high enough off the floor for the underneath to be cleaned.

4. Wherever possible items of equipment should be separated. This will ease cleaning and maintenance and also enable items to be removed with the least disruption to the kitchen. If an identical replacement model cannot be found there will be a space for an alternative make, the replacement will not look so out of place.

Individual types of equipment are discussed in the following paragraphs.

4.4.3 Boiling Pans

At Frimley these are gas heated as no steam supply was available. They are similar to large double saucepans. The gas is used to heat a jacket of water that in turn heats an inner liner or pan in which the food is cooked. The inner liner is made of stainless steel, it is not fitted with a drain cock. Each of the pans has to be emptied by hand. They are then lifted out when cool to be cleaned. They are very heavy and awkward to handle, and have to be taken by trolley to the pan wash for cleaning. This is some distance from the cooking area. The pan wash sinks are too small to accommodate the pans so that these are washed and emptied whilst on the floor.

At Bury the pans are heated by electricity but a water level gauge is not fitted, so that it is impossible to know if there is sufficient water in the jacket. The makers recommend daily topping-up.

The pans are slow to recover heat so that they are useless for the speedy batch cooking of convenience foods. At Bury they are being replaced by smaller tilting kettles for this very reason.

Recommendations

1.* Smaller tilting kettles should be provided. This will make batch cooking of convenience foods possible.

2. If heated water jackets are chosen it is essential that water gauges are fitted.

3. Steam operated boiling pans should be provided where steam is available.

4.* The pans to be provided with drain cocks. Separate removeable liners are not practical.

4.4.4 Steaming Ovens

These are low pressure types, the steam is generated by a gasflame heating a tank of water at the base of the oven. These are adequate for small steamed puddings but are very slow, thus unsuitable for batch cooking convenience foods. Meats can take a long time to cook. Grease accumulates in the tank, making cleaning difficult. Grease traps were not fitted so that when the tank is emptied for cleaning, grease passes directly into the drainage system. This grease blocks pipes and gives off an offensive smell.

Recommendations

1.* For the speedy batch cooking of frozen convenience foods high speed steamers should be provided. These although initially more expensive use far less fuel, as they are only in use for minutes at a time. The food is more nutritious, as less of the nutritive value is lost by this process.

2. Conventional pressure steamers will be required for the cooking of hams and other meats.

3.* Each oven to be fitted with a grease trap.

4.4.5 Fryers

The deep fat fryers are in a specially designed unit which includes storage drawers for blanched chips. At Bury this is not required as they use convenience frozen chips.

The pilot lights are susceptible to draughts and awkward to light as they are positioned low down and too far underneath to reach easily.

The narrow gangway makes it dangerous for staff to pass when the fryers are in use. The floor becomes slippery from splashing fat, adding to the dangers.

Bratt Pans

The shallow fryer or Bratt pan is a very useful and versatile piece of equipment. The are in constant use. A second one is to be installed in place of one of the boiling pans.

Recommendations

1. A custom designed unit is unnecessary. Standard fryers could be supplied with mobile tabling.

2.* Two shallow fryers should also be provided.

4.4.6 Convection Ovens

These were very early models and since these 2 tier ovens were installed many improvements have been made to the design. These early models have had many breakdowns. The ovens are not very efficiently lagged and the side of the end oven becomes very hot and therefore dangerous. Insulating panels have had to be fitted to protect staff from burns. The 2 tier ovens have not been satisfactory as the heat rising from the lower oven affects the efficiency of the controls of the upper oven. These controls overheat and parts have burnt out.

A single tier oven though occupying more floor space is much easier and safer to load and unload. They can be supplied with wheel-in racks. The cooked food can be left on these to cool after unloading. They are also easier to clean and maintain. The 2 tier types are awkward as the top is too high and the lower too low for staff to clean efficiently.

One of these ovens should have been sited in the pastry area.

Recommendations

1.* Single tier ovens with wheel-in-racks should be provided. Space will be needed adjacent to the oven for parking the rack.

2. A convection oven should be sited in the pastry area.

4.4.7 Oven range with boiling top

The present 2 ranges are inadequate, also their tops have become buckled in use at Bury and will have to be replaced. The ranges are part of the island group, their removal will cause problems. Their replacement will have to be compatable with the other items.

Recommendation

1.* Four heavy duty ranges should be provided, these to have 2 solid and 2 open burner tops.

2. They should be sited side by side not back to back.

4.4.8 Hot Cupboard, bain marie and hot water boiler

These are sited adjacent to the dining room servery at the end of the cooking area. They are not close enough to the servery counter for convenience. The water boiler is sited so that it can be shared by both dining room and kitchen staff but is not convenient for either.

A second hot cupboard with grills over is sited at the opposite end of the cooking area. This is reserved for the patients' tray service. When the grills above are in use the cook has to move out of the way whilst other staff gain access. The grills should be free-standing or over a plain work-top. The hot cupboard top is not a suitable work-top as it is heated.

Recommendations

1.* The hot cupboard with bain marie should be moved to within 4 ft of the main servery, to leave a working space between it and the main counter; the cupboard section to be accessible from both sides.

2. The water boiler (if required) to be sited in the main cooking area near to the ranges. A separate specialist model is required for dining room use.

3. The hot cupboard could also be built-in to the dividing wall if provided.

4.4.9 Grills or Salamanders

These are sited at the end of the cooking area nearest to the tray service. They are not very convienently sited for the staff servery which is at the opposite end. They are higher than eye level height as they are fitted over a hot cupboard unit.

Ideally they should be accessible to both service areas.

The hot cupboard top is far too hot for use as a work-top. A separate work-top is required.

Recommendations

1. A duplicate set of grills is required for the staff end of the cooking area, or

2. Alternatively they should be sited so as to be equidistant from each service area.

3.* The grills should be at eye level height, with work table underneath.

V. TRAY SERVICE AREAS

5.1.1 Tray Service System

There were a number of tray service systems available when the hospital was planned. These employed an assembly belt 20-24' long with ancillary equipment. The plates are placed onto a heated base on a tray; cutlery, napkins and other cold dishes are added to complete the patients choice. The completed trays are loaded into unheated tray trolleys and once at ward level the trays only require placing before the patient. At least 12 staff would be required to operate the belt for lunch and supper meals.

The system chosen consists of a very short assembly belt with less ancilliary equipment. The plates pass along the belt and the completed meal is then placed in the heated upper compartment of a 2 temperature trolley. Some time earlier, the tray with cutlery and cold dishes had been assembled using the belt and placed in the lower unheated section

of the trolley. On arrival at the ward the patient's hot meal is removed and placed on the corresponding tray and delivered to the patient. This system uses less staff but it is only possible to offer a limited choice of dishes to patients.

The tray service area is far too small, the working space is cramped and poorly ventilated. At lunch and supper meals up to 12 people are working in the area. There is very little space either side of the belt for equipment or for operators. It also gives the operator little time to place the food on the plate.

The service at both hospitals takes a little over an hour which requires great concentration from the staff. Considering the speed of the belt and the noise and heat of this confined space it is a wonder that staff manage to produce such presentable meals to patients.

At both hospitals there is sufficient space for a longer belt to be installed. It is impossible though to increase the width.

The use of conventional tray trolleys would simplify the system especially at ward level.

The hot cupboards provided for the tray service should have been mobile, the present ones are not easily accessible during peak times.

Recommendations

1.* Use a conventional system which would provide a comprehensive service of meals to patients.

2. The area should be as stated in the revised Design Guidance.

3.* The walls of this area should be tiled.

4.* A mobile heated cupboard is required for bain marie dishes.

5.1.2 Tray Preparation Bay

The need for this is apparent and at Frimley the lobby outside the vegetable store is used as a makeshift area.

Recommendations

1. This bay should be provided adjacent to the tray service area.

2. The following equipment will be required:-

   a. A refrigerator for butter, cheeses etc.

   b. A sink unit with drainer, a hand basin.

   c. Worktops with drawers and storage cupboards.

   d. A mobile deep freeze cabinet for ice cream etc.

5.1.3 Tray Service Supervisor's Office

This area too was not included at the design stage.

Recommendation

1. The tray service supervisor requires an office, with the usual furniture and a telephone.

5.2.1 Trolley Bay

This area provides parking space for the large 2-temperature trolleys. The power sockets for the trolleys are suspended from the ceiling and designed to move if accidentally knocked. They have been found to need various modifications in use. There are also wall mounted sockets for the bulk food trolleys.

The area is adjacent to the tray service area and pan and central wash-up areas. A separate trolley wash area was not provided, the trolleys are cleaned in the central wash-up. Because of the electrically heated components they cannot be hosed out as are conventional tray trolleys.

Recommendations

1.* Using conventional tray service trolleys the area of the bay could be reduced and there would be no need for overhead power sockets.

2.* An area should be designated as trolley wash where they could be washed down by a spray hose. A drain and shower type curtain should be provided.

3. Wall sockets may still be required for bulk food trolleys if this type of service is used for children's and ground floor wards.

5.3.1 Central Beverage Preparation Unit or Still Room

This area is designed for the preparation of all beverages for patients and staff.

a. Patients Some seven drinks are served to patients daily. Specially designed beverage trolleys are used to distribute the drinks to wards. Each trolley serves 2 wards, they alternate in receiving the drink first, ideally a separate one should have been provided for each ward. The trolleys carry all the crockery and cutlery required fn addition to the ingredients for drinks. The milk is heated and placed in an insulated urn and loaded onto the trollyes. Hot water is carried in another urn. Tea is infused at the ward water boiler. The weight of the trolleys is quite considerable for one woman to push around the corridors.

The actual system varies at each hospital, at one the tea-pot and milk jugs are carried to the wards on top of the tray trolley. Some crockery is also carried in this way. The tray trolleys are too tall for the safe loading and unloading of these heavy trays. The trolley is not designed for this purpose.

Beverages for geriatric, psychiatric and isolation wards are made in their ward pantries.

The dirty ward crockery returns via the trolley to the central wash-up area where it is unloaded and washed. The trolley is cleaned and reloaded with clean crockery. A considerable amount of crockery is used as there is insufficient time between the services

to wash, dry, count and reload each trolley whilst it waits. The trolley with clean crockery is then wheeled back into the beverage unit via the main corridor.

Insufficient space has been provided to store all the trolleys so many are left outside in the main corridor.

It was originally planned to send individual tea pots and milk jugs on the tray at breakfast and supper meals, the tea to be infused at ward level. However there was insufficient space between the shelves of the tray compartment of the trolley.

b. Staff Staff beverages are also prepared here and sent down on trolleys via a hoist to the coffee room servery below. Dirty crockery returns the same way. This trolley is unloaded from the hoist and wheeled through the congested tray service area and into the central wash-up. The clean crockery returns the same way. (see also 9.2.1).

Recommendations : Patients

A. Improvements to present System

1.* Provide a separate trolley for each ward.

2.* Ensure that there is sufficient space between shelves in the tray trolley to take individual tea pots and jugs.

B. Future designs

1. Use conventional ward system with beverages made at ward level.

2. Provide separate crockery trolleys for use in conjunction with central wash system.

Staff

1. Install beverage-making equipment in the coffee room servery.

2. This to provide hot and refrigerated beverages. The refrigerated drinks equipment to include a milk and carbonated drink dispenser.

3.* Communication between the floors to be via an internal telephone as the voice-tube is not very efficient or hygienic.

5.3.2 Ward Beverage Unit

These are quite small and provide minimal facilities. They are for emergency drinks only as there is a central beverage distribution system.

The unit worktop is of stainless steel and the provision appears adequate. The wall behind the unit was only painted and in several places the surface was worn away exposing bare plaster. This is most unhygienic.

Recommendations

1.* The ward units should be provided with tiled or stainless steel splash-backs.

2. Future hospitals should be provided with the standard ward pantry as detailed in the Common Spaces document.

3. Drinks should be made at ward level.

4. The washing up of main beverages to be carried out in the central wash-up.

VI. CENTRAL WASH-UP AND STORES

6.1 Pan Wash Area

The pan wash is sited adjacent to the trolley bay and central wash-up but is remote from the main cooking area which generates the work load. All the dirty pans have to be trundled through the narrow tray service area.

The number of sinks is sufficient but their size is inadequate. The boiling pans in the kitchen have removable liners which are too heavy and large to fit in any sink.

Alternative washing facilities should have been provided. A hose reel with spray top could be used and a drainage gulley would be required. This would facilitate handling.

The area was not tiled nor were any splash backs provided behind sinks. The wall surface at Frimley had worn away exposing the bare plaster.

The waste disposer is far too large for this area. The machine becomes very smelly and is very difficult to keep clean. A smaller conventional type would be more suitable. Insufficient pot racks have been provided.

The floor is very slippery and cannot be washed down thoroughly because the original policy did not provide for gulleys (see para 1.4).

At Frimley this area has been completely redesigned. They have extended it and are providing bigger and deeper sinks with larger working tops in between. It is essential to provide sufficient working tops to separate clean from dirty pans. The large waste disposer is to be replaced with a smaller but equally powerful unit.

Recommendations

1. The area should be larger and form a bay off the cooking area.

2. Larger sinks and working surfaces should be provided.

3.* A waste disposer that is easy to clean but as powerful as the previous one is required.

4.* Mobile pot racks should be provided.

5. If boiling pans with removable liners are used then special washing facilities must be provided for them.

6. A hose with spray top and a floor gulley should be provided.

7.* The walls should be tiled with protected corners. The use of coloured tiles should be considered to brighten the area.

8.* Stainless Steel splash backs behind the sinks should be provided.

6.2 Central Wash-Up Area

This was designed to wash all the patient's and staff crockery and cutlery. The one exception is the snack bar which has its own dishwasher. (This is some distance away in the main entrance area).

The central wash-up has been redesigned and re-equippedat both hospitals. The original rack type machines have been replaced by flight type models.

The machine at Frimley is over 20' long. In order to accommodate it the adjoining staff rest room wall has been demolished and that room is now part of the wash-up. An alternative rest room will be provided elsewhere. The staff lavatories have also been removed. The staff now use the public lavatories off the main corridor which is a most unsuitable arrangement.

The large cabinet type waste disposers have also been taken out as in the pan wash at paragraph 6.1. They were difficult to clean and keep odour-free. They have been replaced by a simpler design of the same power.

The original area had limited working space. There was no separate store for either the bulky drums of detergent or sacks of powder.

The originaltabling provided was not very practical and was criticised by the staff. The stripping of patient's trays is carried out using the assembly belt; policy did not provide space in the wash-up for this operation.

The tiled floor in this area becomes very slippery and even staff wearing clogs find it hazardous. The policy made no provision for hosing down the floor. There are no gulleys and the fall of the floor is incorrect. A separate sink unit should have been provided for trolley washing because spilt food becomes baked on in the top heated compartment.

It is not a pleasant area in which to work. The humidity level appears high, the walls and windows run with condensation. The air input/recirculation unit creates noise and draughts like those experienced in the pastry preparation area (para 4.3.3) and needs similar remedies.

Recommendations

1. A larger area should be provided, sufficient to take a flight type machine with inlet and outlet tabling.

2. Tabling should be provided for "unscrambling" the patients' trays.

3.* A separate detergent store should be provided.

4.* The waste disposer should be incorporated into the work-top and be of simple design, easy to keep clean and odour-free.

5.* Standby sinks should be provided. Some of these should be mobile for cutlery soaking etc.

6.* The floor should be non-slip and duckboards should be provided.

7.* The walls of this area should be tiled and the corners protected.

8. The area requires improved ventilation to prevent high humidity.

9. A separate trolley wash should be provided.

6.3 Cleaners' Room

It is sited adjacent to the trolley bay. The room at Bury is also used as a store for cleaning materials. The room is not large enought to store all the cleaning machines and materials. A separate dry store should be provided for cleaning materials (see 6. 4). A stainless steel sink unit should be provided in addition to the bucket sink.

The room should be ventilated, the room at Bury was damp. At Frimley the room had been converted into a pan store and the adjacent equipment store had become the cleaners' room.

Recommendations

1. This room should be large enough to house all the cleaning machines.

2. An extra stainless steel sink unit should be provided for the cleaners.

3.* The room should have tiled walls and floor.

4.* The room should be adequately ventilated to prevent condensation.

5. Ideally the room should be sited nearer to the kitchen cooking and preparation areas and adjacent to the central wash-up.

6.4 Cleaning Materials Store

This room should have been provided, as the cleaners room is not suitable for the storage of these materials. It should be sited adjacent to the central wash-up area.

Recommendations

1. The room should be ventilated and be secure.

2. The cleaning materials should be stored on mobile racking, the larger drums may required palletts.

3. A metal cupboard will be required for small items of cleaning materials.

6.5 Equipment Store

This is sited off the trolley bay some distance from the main cooking area. At Bury the room is used as an extension of the panwash. This is because there is insufficient space to store the cleaned pans. The wooden shelving has become badly soiled and is most unhygienic. The main function of an equipment store is to store new equipment until it is required for use.

At Frimley the store has been converted at some cost into the cleaners' room.

Recommendations

1. A small lockable room is required for new equipment.

2. It should be fitted with adjustable metal shelving.

6.6 Disposables Store

A separate dry store of 60 square feet is required for the storage of disposables. They are used in vast numbers in catering departments. These include paper napkins, vending cups, plastic teaspoons, dishes etc and although inexpensive they require a secure store.

At both hospitals these are at present stored wherever space can be found. They are often left on the floor, where they can be damaged.

Recommendations

1. A room of approximately 60 square feet should be provided.

2. It will require adjustable metal shelving.

3. The room should be ventilated and lockable.

VII. STAFF ACCOMMODATION

7.1 Kitchen Superintendent's Office

This is sited at one end of the cooking area. An observation window is provided but it is of little use as the view is obscured by equipment.

At Bury the office is used by the dining-room Supervisor, as it was said to be too small for the kitchen superintendent.

The room is very small and only has space for a desk and a chair.

Recommendations

1. The area of the office should be doubled.

2. The room should be available for the use of the Head Cook as well as the Kitchen Superintendent.

3. It should be sited so as to provide the Kitchen Superintendent with a clear view of the cooking area.

7.2 Staff Rest Room

This is sited off the trolley bay adjacent to the central wash-up area. The room has been demolished at Frimley and incorporated into the wash-up area. The staff now use the main coffee lounge for their rest periods.

Recommendations

1. A separate rest room should be provided for catering staff.

7.3 Staff Lavatories

This is adjacent to the rest room and just off the trolley bay. These rooms have been beset by ventilation problems.

The problem has been solved at Frimley where they have been removed altogether. The staff now use the public lavatories off the main corridor. As those

lavatories are used by the general public there could be a risk of cross infection.

The original accommodation was limited to one male and one female lavatory. These are inadequate for the large number of staff employed.

The lavatories are some distance from the main working areas and cooking staff have to go through the patient tray service area and trolley bay to reach them.

Changing Accommodation.

Separate facilities were not provided. A central cloakroom is used but this is some distance from the catering department. Some of the male staff are using the lavatories as temporary changing rooms.

Recommendations

1. Sufficient lavatories should be provided as recommended in the Factories and Offices Act regulations.

2. They should be sited for ease of access from the main working areas.

3. Separate changing areas should be provided for catering staff to reduce the risk of cross infection. These should be sited adjacent to the kitchen and dining room.

4. Showers should be provided though at these hospitals they are rarely used. Staff should be encouraged to use them.

5. Adequate storage space is required for the separate storage of clean and dirty uniforms as well as a locker for outdoor clothing.

VIII. HYGIENE AND ENVIRONMENTAL REQUIREMENTS

8.1 Kitchen finishes and Hygiene

8.1.1 Floor Surfaces

The kitchens are tiled throughout including the plinths. The tiles are cracking in the main cooking area. In other areas the surface has worn away with constant traffic and cleaning and is slippery.

The pale colour does not easily show up spilt fats or water. Some sections of the floor have had to be relaid, whether through poor workmanship or unsuitable sub-flooring is not clear.

The painted granolithic floors in the refrigerators should have been tiled. The floor cannot be hosed down as drainage gulleys are not provided.

Recommendations

1. The entire kitchen should be tiled using tough nonslip tiles with a slightly abrasive surface. These are also produced with specially shaped tiles forming integral drainage gulleys and outlets.

2. The floor should be flat and the junction with walls coved.

3. The tiles should be able to withstand hard wear, grease, acids, alkalis and cleaning machines.

4. Red or rustic coloured tiles are preferred because lighter colours do not show up spillages and seldom appear clean.

5. The floor should be laid to fall to drainage outlets.

8.1.2 Wall Surfaces

The kitchen walls are painted using a patent system. The paint on the wall has worn very badly and in places has become unhygienic. The pain behind sinks in several areas has worn away completely exposing the bare plaster.

Painted walls do not meet environmental health regulations which state that the surfaces should be impervious in all food handling areas. The walls at Bury have been tiled at a cost of over £14,000 to meet the Environmental Health Officer's requirements. This caused some disruption to the kitchen. It would have been cheaper to have tiled the walls when the hospital was built (but see para 1.4).

The corners of walls will have to be protected to prevent damage. The walls behind sinks will also require protecting from accidental damage when handling large heavy containers. It is suggested that a stainless steel splash back be installed. The damage was partially caused by the inadequate sized sinks, which prevented the total immersion of some of the pans.

Recommendations

1.* Walls should have an impervious finish, preferably tiles. They should be coved at junctions with floors.

2.* Corners of walls especially in traffic areas should be protected by guards, preferably of stainless steel.

3.* The walls behind sinks and cooking equipment will require protection by stainless steel splash backs.

4. Coloured tiles should be used to brighten the working environment to prevent a cold clinical appearance.

8.1.3 Inner Roof Surfaces

The factory type longspan "northlights" in the main cooking area provide excellent lighting but necessitate special arrangements for periodic cleaning with the proper equipment. The ledges and exposed fans collect dust and grease which can fall into the cooking equipment below.

High ceilings with extensive infra-structure and exposed fans and ventilating equipment are difficult to clean and expensive to maintain. The ceiling surface should be smooth with the least possible number of ledges and grilles.

Recommendations

1. Areas above fryers, ovens and steamers require frequent cleaning and maintenance so they should be easy to clean without specialised equipment.

2.* The inner roof surface requires cleaning at least twice a year.

3.* The fans in the roof were planned to be accessible from outside to prevent disruption in the cooking area; modify if necessary.

8.1.4 Doors and Entrances

The doors and entrances of both hospitals have been badly damaged by the constant toing and froing of trolleys. The original guards were not at the correct height. Some of the doorways are too narrow for the trolleys to be pushed through without either damaging the trolley or the doorway.

The door from the vegetable cooled store opens into the preparation area. This prevents the safe use of the working surface behind where the door opens.

Recommendations

1. Doors should be of simple design and flush with adjacent surfaces.

2. They should be sufficiently wide for trolleys to pass through without collision.

3.* The doors should be adequately protected with bumper bars and kick plates.

4. The doors should be provided with a glass or transparent window at eye level.

5. Equipment should not be placed behind the door. A space should be left free for the door to swing into or a sliding door used.

8.1.5 Windows

The only windows in the kitchen area are in the wash-up. The complete lack of windows gives the kitchen a prison-like atmosphere. The roof lights give adequate natural light. They do not however break the monotony of the plain walls.

The roof lights cause condensation and are difficult to keep clean on the inside without disrupting the work of the kitchen. The clerestories in the day to day store have leaked. In the diet bay they are a source of draughts.

Recommendations

1. Windows should be provided in working areas. They provide ventilation and a view of the outside world. This is essential in areas where the job is boring, dull and repetitive such as the pan-wash.

2. They should be insect-proof and lockable.

8.1.6 Tabling and Worktops

Worktops are provided in the preparation areas. The multiplicity of legs and supports make cleaning very difficult. As many of these as possible should be mobile. This would simplify cleaning as a powered machine could be used. The tabling and worktops could be pulled out and the machine driven through. They should be fitted with lockable wheels.

Recommendations

1.* Wherever possible tables and worktops to be mobile.

2.* All working surfaces to be of stainless steel construction.

3.* Where fixed tabling is essential it should either be sealed against the wall or a gap should be left to enable the wall behind to be thoroughly cleaned.

8.1.7 Shelving and Racking

The racking ranged from various metals to wooden shelves. Most of these were fixed, only a few were mobile. The racking should be changed when funds allow to standard mobile stainless steel racks. This can be moved out to enable the areas to be thoroughly cleaned.

The lowest shelf on many of the fixed racks was too low to allow proper cleaning underneath. One of the Environmental Health Officers has recommended that the lowest shelf should be 18" from the floor, which would allow a mechanical washer to be used.

Recommendations

1.* The racking should be mobile and of stainless steel construction with 2 lockable wheels.

2. Where fixed racks only can be used the lowest shelf should be at least 18" off the floor.

8.1.8 Drains and Gulleys

The individual tun dishes or drains under equipment which discharge into drainage channels appear to have been successful. This type is preferable to the older open drain with metal grille covers. These quickly become dirty and the grilles were difficult to clean.

The latest type of flooring tiles which have a non-slip finish can also be obtained in the shape of a shallow gulley. These are useful for carrying away the water when the kitchen is hosed down. They also have a special drain tile for placing under boiling pans and other equipment. This has a stainless steel cover.

Recommendations

1. The floor should be laid to a fall so that it can be hosed down.

2. Shallow gulleys should be provided around the islands of equipment.

3. A drain should be provided under each item of equipment that has a

tap/cock or otherwise discharges its contents.

4. Grease interceptors should be installed on the equipment. The grease must not be discharged into the drains.

8.1.9 Deep Cleaning

It is recommended that the kitchens require thorough cleaning at least once a year, known in the trade as "deep" cleaning. This involves the dismantling of equipment, the thorough cleaning of components and their re-assembly. It must form part of the standard maintenance programme for the whole hospital, a programme which ensures that the walls, ceiling, fans and ducts are also thoroughly cleaned.

8.2 Environmental Requirements

8.2.1 Heating and Ventilation

The combined system as it was being used seemed to be inadequate. The kitchen was said to be very hot in summer and cold in winter. It was very draughty at all times. Complaints had been made of sore throats in summer months from the draughts. Other reactions also showed a misunderstanding of the design intent. Staff on early duty always switch on as many pieces of equipment as possible when they come in to warm the kitchen and themselves. Energy could be saved if the kitchen was kept at a recommended temperature.

In fact the system which is installed, although functionally adequate for the kitchen's special needs, does tend to create locally adverse environmental conditions. As explained earlier, any such noise and draughts are due mainly to the type and siting of the 4 air input/ recirculation units. In consequence the staff seem to be using switches in a way that unbalances the airflows and reduces heating.

When the units are switched off the lack of their properly tempered air supply is made up by air drawn through other openings (doors and windows) whose temperature cannot be controlled. Overnight cooling can be overcome by leaving the units switched on as intended. Obviously a more refined system could have been designed, but the Best Buy approach influenced the choice of equipment in this respect as in others.

The extract fans in the northlights of the roof also cause problems. They are mounted above cooking equipment where access for cleaning is difficult. They are said to cause draughts which annoy staff working below, and to blow the pilot lights out. The gangways between equipment are not meant for ladders etc to be used without blocking the throughway, thus cleaning can only take place after hours (but see also para 8.1.3).

Recommendations

1.* The system should ensure that main areas are warmed in early morning and late evening but cooled during peak periods.

2. Ventilation units should be incorporated into the building fabric and not suspended within food preparation or working areas.

3.* Louvres should be positioned so as not to cause excessive draughts.

4.* Ventilation louvres and ducting should be cleaned at least once a year.

8.2.2 Lighting

Access to lights within the cooking area is difficult because of the cooking equipment. The passageway is too narrow for ladders and tower trolleys to be used safely. When they are being serviced there is a danger of dust and fluff falling into the food below. Here again the design intent is apparently not observed.

The lighting levels varied in different parts of the kitchen, the diet bay at Bury appeared to be poorly lit. It is essential that workers can see clearly what they are doing especially when using equipment.

Recommendations

1.* Ceiling lights are mostly placed so that they can be serviced from above with the minimum of disturbance to the work of the kitchen, and it should be done this way wherever possible.

2.* Care should be taken to clean light fittings without contaminating food below. The fittings to be flush with the ceiling and not have hanging chains or ledges etc.

3.* Lighting standards to be as recommended by IES.

4.* The cleaning of all light fittings to be clearly allocated to a specific department and included in their PPM programme.

IX. DINING AREAS

9.1.1 Dining Room Servery Area

This is sited at one end of the cooking area with only a hot cupboard and water boiler dividing it from the kitchen.

The open-plan servery is not liked by some of the dining-room staff who state that it is far noisier than traditional ones with dividing walls. The customers queueing at the counter are able to see right into the cooking area.

This could be off-putting for some, but is not uncommon nowadays and makes the cooking staff aware of the customers. If a wall is provided it should incorporate a pass through type hot cupboard installed at chest height.

The full use of the area is restricted by an angled section of the counter and by pillars which create a feeling of congestion. The area has been enlarged at Bury by demolishing the adjacent pantry and resiting the hot-cupboard, to provide space for back bar equipment. This was not provided as it was thought that snacks would not be served

in the dining-room. (The snack bar is sited in the main entrance area where it is used by staff and visitors).

The eating pattern of staff has changed in recent years, they now demand a range of cheaper dishes. There would be increased use of the dining area if snacks were provided. The report by the Medical Architectural Research Unit team has already noted that the dining room is under-used whereas the snack bar is overcrowded. Staff eat there because they can get a wide variety of cheaper dishes.

The short servery counter as originally designed did not allow sufficient space for hot or cold foods. The counter was not very attractive, in fact it is rather like a canteen. At Bury and Frimley the counter space has been extended. At Bury additional bain-maries have been fitted to the top of the flat topped sections. This was the cheapest way they could find of increasing the bain-marie capacity of the counter. The result is not very attractive and is too high for ease of serving. At Frimley the appearance of the counter has been improved by the addition of copper shaded overhead infra-red lights. These help keep the food hot underneath them and are attractive.

There is very limited space for the display of cold foods, at each hospital additional display units have been added. At Frimley a second counter has been installed in the dining area. This has proved very popular but does take up seating space.

The cashier's desk is incorporated in the counter length. This prevents the customers moving along the counter quickly and causes congestion and a bottleneck. The queue often extends along the entrance passage and out into the main corridor, which could deter prospective customers. Resiting the cashier's desk in the dining area, with the cutlery and napkin dispensers nearby, would provide additional counter space and relieve congestion.

The rotary toaster is rarely used, a pair of commercial pop-up toasters would be more practical, sited in the dining area for customers to operate. A pass through hot-cupboard is required for storing food from the kitchen although batch cooking of most items should be encouraged.

The water boiler is badly placed in the kitchen area (see 4.4.8). Plates for meals are heated in the lower compartment of the counter hot-cupboards. This is awkward for staff to reach quickly at peak times. Plate lowerators between each of the sections are preferable, heated ones for the main meals and hot sweets and unheated ones for cold meals and sweets. Although some of these latter items may be plated in advance and displayed in the cabinet provided.

Recommendations

1. Increase the amount of bain marie container capacity for hot foods by a third.

2. Duplicate the cold counter and position one at each end of the counter. The cold section to include an upper self-help cabinet.

3.* Overhead infra-red lights should be provided over the heated sections.

4.* Space should be provided for lowerators for hot and cold large and small plates.

5.* The cashier's desk should be resited in the dining area. The section to incorporate a tray slide and equipment for dispensing cutlery and napkins.

6.* Water and glasses should also be sited near to the above items.

7.* Commercial pop-up toasters should be provided for staff to use themselves. They can purchase the bread suitable for toasting from the counter.

8. A pass-through hot cupboard or one with doors both sides should be provided. It should be built into the dividing wall at chest height if there is to be such a wall, otherwise at floor level.

9. Back-bar equipment should be provided. It can be placed at right angles to the counter so that the operator does not have his back to the customer. The equipment could also be used for serving night staff and breakfast meals.

9.1.2 Dining Room Pantry

This room is sited behind the servery adjacent to the cooking area. It provides very little storage space for convenience foods. At Frimley part of the space is taken up by a refrigerator, and at Bury the room has been removed completely to enlarge the servery.

Recommendations

1. A larger pantry should be provided close to the dining-room servery and supervisor's office.

2. It should have adequate shelving for convenience foods and for the storage of disposables.

3.* The refrigerator should be resited in the servery area.

9.1.3 Dining Room Supervisor's Office

This office overlooks the dining-room, the area is just sufficient for one member of staff. There is little room for interviewing staff and for a junior supervisor to share the room.

Recommendations

1. The area should be increased to provide accommodation for the supervisor with sufficient space for interviewing staff.

2.* An internal telephone should be provided.

9.1.4 Main Dining Room

The general impression is that the dining and snack facilities should be larger in each hospital so that staff do not have to share one of the dining areas with visitors. A snack bar servery area adjacent to or incorporated into the main dining servery would be very popular and increase the use of the main dining room. Alternatively the snack bar could be some distance away but kept exclusively for hospital staff.

The dining room is attractively furnished and the floor carpeted, providing a pleasant atmosphere. The lowered central timbered ceiling provides an interesting feature, although the tables underneath are often the last to be used.

The seating capacity at Frimley has been reduced slightly by the installation of a counter unit. This unit provides cold buffet type foods and iced drinks and cold sweets. It is very popular and the food looks attractive. The reason for this extension is because the existing servery counter is too small for the adequate display of cold foods.

At Bury part of the dining area was originally reserved for medical staff but the screen has now been removed. The cashier has also been resited in this area to provide extra servery counter space.

The iced water dispenser is inadequate for the number of diners. The clearing trolleys are kept in a corner of the dining room where customers enter, which is not very inviting. This is because of limited space for clearing trolleys in servery area.

This room is not used for night staff as they are fed in the snack bar area, where vending machines have also been provided.

Recommendations

1. Increase the area to incorporate a snack sitting area.

2.* Provide 2 iced water dispensers.

3.* Provide an entrance lobby or area for the cashier and cutlery and napkin dispenser.

4. Provide adequate space for parking the clearing trolleys out of the dining area.

5. Provide a central decorative feature for the dining room to prevent a monotonous canteen type appearance.

6. The dining room should be open 24 hours and the back bar units used for feeding night staff. Vending machines could also be provided for use in emergencies, for night staff and for snacks when the counter is not staffed.

9.2.1 Coffee Room Servery

This is sited on the floor beneath the kitchen. It is connected with the beverage preparation by a small lift. The policy was for all drinks to be prepared in the central beverage unit and then sent down in the lift to the coffee lounge. (see also 5.3.1).

At Frimley it is proposed to install separate beverage making equipment in the servery. They are also providing cold drink dispensers, milk dispensers and sandwich display counter units. At both hospitals a very large proportion of the income is from snacks and rolls, sandwiches and package goods. The coffee room is a popular meeting place, and the installation of extra display cabinets has been more than justified.

Clean crockery is sent down in the lift from the central wash-up above. The dirty crockery returns the same way. The crockery is trundled through the tray service area to and from the wash-up.

The method of communication between the beverage making unit and the servery is by voice-tube. This is thought to be unhygienic and not as satisfactory as an internal telephone.

Recommendations

1. If possible site on the same level and inter-connecting with the main dining-room. This would eliminate the need for a lift.

2.* Alternatively beverage making equipment should be provided so that it is independent.

3.* Cold drink dispensers should be provided both for carbonated and still drinks.

4.* Two self-help display cases for snacks should also be provided.

5. An internal telephone should be provided, a voice-tube is most unsuitable.

9.2.2 Coffee Room

Sited beneath the main dining area. Staff leaving the dining room go into the main corridor and down a flight of stairs to reach the lounge. Because of this arrangement some custom may be lost by staff deciding instead to go back to their departments.

The lounge and dining room should be adjoining(but see para 1.1.)

The lounge is an attractive room but the decorations have become filthy due to insufficient ventilation and the effect of cigarette smoke. The room becomes stuffy unless the doors and windows are left open. Part of the room overlooks a garden area with fish pond. This could have been made much more of an attractive feature. The room is plainly furnished and some effort has been made to group the furniture informally.

At Bury the seating capacity has been increased slightly by the installation of a long counter with milk bar type stools. This has not proved very popular with staff.

The seating capacity is very limited and at lunch times the room is very full, and people perch wherever they can.

There appeared to be little scope for extension except to build out over the garden area, this would take away the only attractive feature.

Recommendations

1. The seating capacity should equal that of the dining-room, the area should be increased to provide the extra seating.

2.* More informal bench seats, grouped so as to make the maximum use of the area should increase the seating capacity.

3.* As this is a smoking area the ventilation should be designed so that it keeps the atmosphere clean and wholesome.

9.3.1 Snack Bar Servery

This is sited close to the main entrance of the hospital and some distance from the main catering department.

The snack bar was designed to serve patients, visitors and staff and has proved an extremely popular area. This popularity produced many problems and in the end service has had to be drastically cut. Neither of the snack bars was in use as originally designed, and modifications have been made at Bury.

The counter is equipped with hot and cold bain marie units, refrigerated display units and beverage making units. The rear of the counter area is equipped with back bar units. All this equipment together with a large hot cupboard and dishwasher and low ceiling combined to produce an intolerable working environment. The ventilation system just did not cope with this amount of moist heat in such a small area. The staff complained of the humidity and heat and left doors open which only created draughts and made matters worse.

The only way to reduce the heat was to switch off the machines. The result is now that the back bar units are not used, the dishwasher only at peak times and the hot cupboard units only to heat soup.

The original conception was excellent, but the demand was vastly underestimated.

The servery has very little preparation room for snacks and sandwiches, these are therefore produced in the kitchen some distance away.

A hoist connects the servery with the day unit above but is rarely used.

Recommendations

1. A snack bar counter for staff should be provided adjacent to or incorporated into the main dining room servery (see 9.1.1 and 9.1.4).

2.* The scale of equipment provided was suitable but it must be adequately ventilated.

3. The ceiling of this area should be higher to provide a cooler and less oppresive working environment for staff.

4. Back bar units where provided can be sited at right angles to the counter forming an 'L' shaped unit. Otherwise the operator always has his back to the customers. It is also easier for the operator, who has less walking to and from

5.* Ventilation filters (over fryer) to be supplied that can be washed in a standard dishwasher.

6. A larger area should be provided for the dishwasher and associated tabling. Storage space for crockery is essential.

7. If sandwiches are to be prepared in this area a larger preparation area will be required.

9.3.2 Snack Bar Area

The area appears quite large until seen at peak meal breaks when people

are eating in most parts of the entrance area. The seating is attractively arranged and is in constant use. This is the most popular eating and meeting area of the hospitals. The reason is of course the availability of snacks and cheaper food items which can be purchased speedily and consumed with the minimum delay.

In the initial period people came for miles to eat snacks at the attractive hospital prices. One of the difficulties encountered was the difficulty in charging two-tier prices. The general public were buying food at the nurses'/ASC prices. There was some resentment, it was thought that the public should pay more.

Many staff these days do not wish to have a large meal at mid-day but prefer to eat the main meal of the day at home with their family. This of course refers principally to the married members of staff. The snack bar is available to everybody, but is mainly used by staff judging by the members of uniforms present.

At one of the hospitals disposable cups etc are used because of the difficulties described above when using the dishwasher. This has created a disposal problem. The cups are left all over the entrance area and have to be collected at frequent intervals.

Vending machines are sited in this area, see paragraph below.

Recommendations

1. The Snack Bar in this area should be designated for patients' and visitors' use only.

2. Snacks for staff should be provided elsewhere, for instance in the main dining room (see 9.1.4).

3.* Vending machines are a useful adjunct for this area. The range could be extended to include confectionery vending machines.

4.* The seating should be chosen so that it is not too comfortable for long periods, preferably commercial snack bar types. These have modern plastic finishes that are bright and colourful and are easy to clean.

5. The seating area to be increased to prevent the diners overflowing into the entrance area seats.

9.3.3 Vending Machines in the Snack Bar Area

A bank of vending machines is sited in the snack bar area, these are in use 24 hours. They were originally installed for serving meals to night staff when the main kitchen was closed. This has not been very successful as the meals are often consumed long before the night staff have arrived on duty. This has led to the vetoing of the machines by night staff.

It would be almost impossible in this open area to prevent anybody from purchasing the meals. These machines if they are intended for night staff should have been sited elsewhere. The staff could eat their meals in more restful surroundings. The snack bar is open all night to anybody who comes to use it, so that night staff are constantly disturbed and are not able to relax.

These machines require careful cleaning and maintenance to ensure safe

working. Food in refrigerated vendors must be date coded and thrown away if not purchased in 24 hours or whatever time is thought to be safe for the particular foodstuff.

Recommendations

1. Vending machines are a useful supplement to the meal service in this area and should be available 24 hours a day.

2.* Where they are provided for night staff use they should be sited in the staff dining area, not in a public area.

3.* An adequate number of bins should be provided for the disposal of the trays, cups, coverings etc used in these machines.

4.* The machines require constant checking and cleaning to ensure they are in a good safe working condition.

5.* Food sold from refrigerated vending machines should be date stamped and disposed of if not sold within the appropriate time limit.

X. OFFICE ACCOMMODATION

10.1 Catering Manager's Office

The offices are sited in a block across the rear street from the main kitchen.

The Catering Manager's is quite small and equipped with the minimum amount of furniture, inadequate for interviewing staff and for meetings.

Recommendations

1. A larger office should be provided, with sufficient space for furniture and for interviewing staff.

2. The manager should have a second exit door other than the one through the general office.

10.2 Catering Clerk's Office

This is in fact part of the entrance to both the catering manager and dietician's office, so that is also a busy thoroughfare and waiting area. The office should be linked to the manager but also provide a quiet working environment for the clerks. They are calculating and collating orders for food etc and this must be carried out accurately.

Recommendation

1. The area should be increased to provide sufficient space for 2 clerks and their furniture.

2. The room should not form part of a waiting area or entrance lobby, but be separate with a door through to the manager.

10.3 Assistant or Deputy Catering Manager's Office

This office has not been provided, it is recommended that an office be provided to the same size as the manager's. This office will also be used by trainees for study etc. It should be sufficient for 2 officers with appropriate furniture.

10.4 Dietician's Office

As with the manager's office the area is too small, there is little space for filing cabinets etc and for interviewing patients. The latest proposal is that the Dietician's office be provided in the out-patients department.

Recommendations

1. A larger office should be provided with sufficient space for a junior member of staff and the usual office equipment and furniture.

2. The office should be provided in the out-patient's department where the majority of the dietician's work is carried out.

3. There should also be sufficient desk space in the diet bay for writing out dietary requirements for individual patients.

XI. CONCLUSIONS ETC

11.1 Conclusions

There is no doubt that the basic design when planned 10 years ago was based on sound advice and that it does work.

The designs of kitchens and equipment are constantly evolving and food technology is advancing rapidly. The staff situation has changed rapidly in the last few years. Staff are now more organised and conscious of their rights and very aware and critical of their working environment. The introduction of bonus schemes, the Health and Safety Act have all brought a greater awareness to them of their power.

Therefore it is inevitable that there can be no such thing as a "perfect plan" and that alteration based on use and development should take place, from time to time.

This report contains many recommendations for consideration when planning future hospital catering departments. It is hoped that many of these will be included in the Nucleus catering design which is a successor to the Best Buy design.

These notes may also be considered when revising the Design Guidance for Kitchens and dining-rooms now long overdue. They were last revised in 1962.

Since these 2 hospitals were built a far more comprehensive menu has been used requiring an even greater number of pre-portioned convenience foods. There has also been a change in eating habits. Far more staff require snack type meals. There is also a greater awareness of costs both of food and of the energy used in producing the meals. Staff are also seeking ways of reducing their cost of living hence the greater use of snadwiches and rolls in place of main meals.

Another major factor long overdue is the encouragement of AHAs to invite the local Environmental Health Officer to report on the condition of their hospital kitchens.

This has brought to light many defects in the design of kitchens some of which may have been avoidable.

The Environmental Health Officers have been very critical of the Best Buy design and in fact a considerable amount of money has been spent in bringing the hospital kitchen to their standard. Future planning teams should include an EHO at the design stage to prevent later expensive and disruptive modifications being carried out once the unit is in operation.

11.2 Acknowledgements

We would like to thank the officers and staff of the 2 hospitals for their hospitality and the helpful advice provided in compiling this report. We would be very pleased to receive their comments on this draft copy and must apologise in advance for any glaring omissions.

11.3 Bibliography

Best Buy Planning Policies IID and E
DHSS Building Notes No 10 Kitchens
" " " No 11 Dining Rooms
" Equipment " No 10 Kitchens
" " " No 11 Dining Rooms
" Catering Manual Hygiene
" Nucleus Green Pack Catering Department
BSRIA Reports on Kitchen Ventilation
MARU Report on Dining Areas
DHSS Energy Study Group No 6 "Wild heat losses in kitchens"
EHO's Reports on Bury and Frimley Hospitals
Food Hygiene Regulations.

XI 11.4 TABLE OF COMPARISONS OF AREAS WITH OTHER GUIDANCE

AREAS	1961 BN 10 1000	REVISED BN 10 1000	BEST BUY MK I	BEST BUY MK II	DESIGN GUIDANCE 1978	NUCLEUS (600)	
Vegetable Store	18.58	16.72	8.08	15.74	17.00	11.24	
Daily Store	13.94	18.58	17.19	13.52	18.50	9.75	
Larder/Cooling	13.94	13.94	10.96	16.37	14.00	6.50	
Kitchen Cold Room	4.65	37.16	6.97	8.45		3.72	
" Deep Freeze	-	46.45			8.00	4.83	
					6.50		
Meat Cold Room	3.72	18.58	6.69	7.63	3.00	4.83	
Equipment Store	7.43	5.57	5.57	6.40	7.50	5.57	
Vegetable Preparation	23.23	18.58	12.26	20.44	16.50	14.00	
Meat & Fish "	22.30	13.00	9.29	18.19	22.50	9.94	
General "	-	23.22	N/A	N/A	18.50	9.10	
Pastry "	29.73	27.87	13.01	21.46	30.00	15.24	
Diet "	41.80	18.58	11.61	19.82	18.50	15.24	
Tray Assembly "	-	9.29	-	-	14.00	-	
Cooking Area	111.48	107.77	73.39	163.13	121.00	103.68	
Pan Wash	22.30	18.58	10.50	20.52	18.50	10.87	
Tray Service	-	89.19	39.86	47.60	89.50	65.03	
Trolley Bay	65.03	27.87	65.50	62.86	56.00	15.79	
						5.95(WASH)	
Central Wash-up		37.16	49.79	66.27	65.00	29.08	
Cleaners Room	5.57	5.57	1. 3.99	7.10	10.00	6.69	
			2. 4.65	7.63			
			3. 5.57	8.32			
Detergent Store	-	-			6.00		
Pantry Central Bar	-	-	4.74	10.34			
Offices Catering Manager	11.15	11.15	10.78	9.78	11.00	6.97	
Dietitian	11.15	7.43	10.78	9.38	11.00	-	
Asst C Manager		11.15			11.00	11.52	
Clerks		7.43	19.32	17.26	16.00		
Kitchen Supt		7.43	6.87	8.16	7.50	4.18	
Tray Supervisor	-	-					
Changing Room M	13.94	18.58				11.52	
" " F	22.30	22.30	26.20	33.15	60.00	12.45	
Toilets M							
Toilets F							
Still Room			27.31	41.02		15.61	
Empties Room					9.00		
Refuse					14.00		
Staff Rest Room	22.30	22.30	17.74	20.32	22.50	8.92	
TOTAL	464.54	661.45	478.62	680.86	722.5	402.98	
CIRCULATION 15%	69.68	99.22	71.79	102.129	108.38	60.45	
TOTAL	534.22	760.67	550.41	782.99	830.88	523.88	

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